



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/608,802	06/30/2000	Martin Cieslak	CISCP146	2424
22434	7590	12/01/2004	EXAMINER	
BEYER WEAVER & THOMAS LLP			KIANERSI MITRA	
P.O. BOX 778			ART UNIT	
BERKELEY, CA 94704-0778			PAPER NUMBER	

2145

DATE MAILED: 12/01/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/608,802

Applicant(s)

CIESLAK ET AL.

Examiner

mitra kianersi

Art Unit

2143

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 03 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 July 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-35 and 37-82 is/are pending in the application.
- 4a) Of the above claim(s) 36 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-35 and 37-82 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 June 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Response to Arguments

Applicant's argument filed on July 14/2004 has been fully considered, but they are not persuasive.

Applicant on page 19, line 17 argues that the distributed server system of Logan does not teach or suggest the claimed invention because it has omitted meaningful citation such as the part where it refers to Fig.1 of the Logan specification to support anticipation. Logan on col 3 and 4 discloses FIG. 1, which represents a distributed-server load-balancing system and is referred to herein by the general reference numeral 100. The distributed-server load-balancing system 100 allows web-based content and services to be redundantly delivered to many clients, represented by a client "Z" 102, from many independent web-server sites over Internet 104. For illustration purposes, assume that the distributed-server switch 108 receives a domain name server query that originated with client 102. The distributed-server switch 108 will return a set of IP-addresses that represent a virtual-IP (VIP). For example, the distributed-server switch 108 could respond to the URL query with a set of IP-addresses. Each of these several IP-addresses exists at a geographically diverse server, e.g., as represented by distributed server switches 106 and 110. The client 102 will receive such response via its local domain name server. The client 102 is then able to use these IP-addresses and open a TCP Port 80 connection to "192.168.13.20" which is, for example, a VIP-address actually running at distributed-server switch 106. The client 102 does not know this is only a VIP, and can ignore a real IP-address of "192.168.13.10" that exists at switch 106. Thereafter, the traffic generated by client 102 with the "www.alteon.com" website is handled by the distributed-server switch 106 and off-loaded from the other possible switches 108 and 110. The VIP's set up for each switch 106, 108, and 110 must each enable client access to the same content and applications, so that a request to any one will result in the same data being given to the client 102. A policy therefore needs to be established that distributes the available resources to the users needing service.

Art Unit: 2143

The distributed-server load-balancing system 100 of FIG. 1 uses a domain name server to respond to DNS-requests for VIP sites. The "www.alteon.com" example represents several VIP's scattered through the United States with access to the same content for the Alteon Web distributed-server. When the switch receives a domain name server Name Request to resolve "www.alteon.com", associated with a VIP, it will respond with an appropriate domain name server response that matches the "best site" to respond to the subsequent content requests. Such best site, for example, represents the one that imposes minimum delays on the greatest numbers of users. Other criteria are possible, such as defining the best site to respond as the one that is the least costly.

Applicant on page 20, line 14 argues that the HTTP redirect of Logan evades a fail server. And argues about what traffic portion would be allocated to the failed server and the HTTP redirect of Logan does not anticipate claim 20. Logan on col 10, lines 6-15, disclose that it is important for a switch to weigh-in to the final decision the geographic source of a user request prior to performing any session hand-off. When a switch receives a domain name server request for a domain that it is configured for, the switch should inspect the source IP-address of the request, and generally associate it with the IP-address blocks issued from IANA to the various regional registries. Table VI shows some of the address block allocations for the various regional registries, and their respective geographic domains.

Applicant on page 20, line 14 argues that which processing device is the office action applying this failed server to. Logan on col 5, lines 38-45 discloses that if the server switch 106, 108, or 110, that client 102 has been pointed to suddenly experiences a failure or is overloaded, it will issue an "HTTP redirect". The client 102 is thus commanded to go to a different server switch 106, 108, or 110. The "HTTP redirect" will occur when an "HTTP Request" arrives at a VIP that is at maximum connections ("MaxConns") or no longer has any healthy real servers. Because the arguments with respect to the allowableness of independent claims were found unpersuasive, these same arguments are not persuasive with respect to the other dependent claims.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-5, 7-10, 12-14, 19-25, 27-29, 33-34, 40-48, 50-53, 57-63, 65-67, 72-73, 78-82 are rejected under 35 U.S.C. 102(e) as being anticipated by Logan et al. (US. Patent No. 6,578,066)

1. As per claim 1, a method of facilitating redirection of traffic sent from a first processing device to a second processing device, the method comprising:

-at a third processing device associated with a plurality of traffic handling systems, receiving traffic information from at least a portion of the associated traffic handling systems, wherein the traffic information specifies which data should be redirected to the portion of associated traffic handling systems; and determining how to redirect data received by the third processing device to a selected traffic handling system based on the received traffic information. (web based content delivered to many clients, col 3, lines 39-47), and (Fig.1 is a block diagram of a distributed-server load balancing system)

2. As per claim 2, a method wherein the determination of redirecting data is accomplished by:

-communicating the traffic information to at least a designated one of

Art Unit: 2143

3. the associated traffic handling systems; and at the third processing device, receiving traffic redirection information from the designated traffic handling system, the traffic redirection information being based on the communicated traffic information. (User datagram Protocol UDP and Transmission control Protocol TCP, col 2, lines 47-67)

4. As per claim 3, a method comprising at the third processing device, building or updating a data structure based on the received traffic information, wherein the traffic information is communicated to the designated traffic handling system within the data structure. (Triggered update to inform all other distributed sites, col 6, lines 66-67 and col 7, lines 1-10)

5. As per claim 4, a method where in the third processing device, receiving a packet from the first processing device destined for the second processing device; and redirecting the packet to a selected one of the traffic handling systems based on the traffic redirection information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections. col 5, lines 38-45)

6. As per claim 5, a method further comprising: receiving the packet back after redirecting it to the selected traffic handling system;
Determining that the packet is to be sent to the packet's original destination address instead of being redirected to the selected traffic handling system; and sending the packet to its original destination.(the switch sends the domain name server response back to the client, col 3, lines 16-25)

7. As per claim 7, wherein the traffic information sent from a selected traffic handling system to the third processing device includes service options specifying which data is to be redirected to the selected traffic handling system. (corresponds to HTTP redirect option that can be used and set to on/off with the default being on and the use DNS Respond option, col 11, lines 32-35) and (Fig.1)

8. As per claim 8, wherein the service options include a plurality of fields that are configurable to indicate that one or more fields of a packet received in the third processing

Art Unit: 2143

device are to be used to determine redirection of packets to the selected traffic handling system. (services that are configured on the result server, col 6, lines 60-65)

9. As per claim 9, wherein the fields are selected from a group consisting of a source IP field, a destination IP field a source port field, a destination port field, o source IP alternative field, a destination IP alternative field, a source port alternative field, and a destination port alternative field. (corresponds to TCP or UDP port numbers, col 1, lines 36-41)

10. As per claim 10, a method, wherein each field indicates that a corresponding field of a packet received in the third processing device is to be used to generate an index to a table identifying the plurality of associated traffic handling systems, the generated index being associated with the selected traffic handling system. (hands-off table corresponding to the domain, col 3, line 17) and (hand off weigh index, col 11, line 39)

As per claim 12, a method wherein at least one of the fields may be set to indicate one or more port identifiers of traffic received in the third processing device. (col 1, lines 36-41)

11. Claims 13 and 14 a method, wherein the fields are selected from a group consisting of a port 0 field, a port 1 field, a port 2 field, a port 3 field, a port 4 field, a port 5 field, a port 6 field, and a port 7 field. And also wherein the fields includes a source/destination field to indicate whether the port identifiers of the received traffic are source ports or destination ports are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. (col 4, lines 37-46)

12. As per claims 19, 33, 57, a method wherein the traffic information sent from a selected traffic handling system includes identifying information for the selected traffic handling system. (col 1, lines 37-41)

13. As per claim 20, a method of facilitating redirection of traffic sent from a first processing device to a second processing device, the method comprising: at a designated traffic handling system associated with a plurality of traffic handling systems and one or more routers, receiving traffic information from at least one of the routers, wherein the traffic information specifies which data should be redirected to which associated traffic handling systems; and allocating traffic portions to each traffic handling system based on

Art Unit: 2143

the received traffic information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

14. Claims 21, 41 and 59, recite similar limitation as claim 3. They are analyzed and rejected by the same rational.

15. Claims 22, 42, 45, 60 recite similar limitation as claim 7. They are analyzed and rejected by the same rational.

16. Claims 23, 43, 46 and 61 recite similar limitation as claim 8. They are analyzed and rejected by the same rational.

17. Claims 24, 44, 47, 62 recite similar limitation as claim 9. They are analyzed and rejected by the same rational.

18. Claims 25, 39 and 48, 63 and 77 recite similar limitation as claim 10. They are analyzed and rejected by the same rational.

19. Claims 27, 50 and 65 recite similar limitation as claim 12. They are analyzed and rejected by the same rational.

20. Claims 28, 51 and 66 recite similar limitation as claim 13. They are analyzed and rejected by the same rational.

21. Claims 29, 52 and 67 recite similar limitation as claim 14. They are analyzed and rejected by the same rational.

22. As per claim 34, a method of reinserting a redirected packet into a flow between a first processing device and a second processing device, the method comprising:
receiving a redirected packet from a third processing device in a fourth processing device;
and sending the packet back to the third processing device for transmission. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

23. As per claim 40, a first computer system associated with a plurality of traffic handling systems and operable to facilitate redirection of traffic sent from a second computer system to a third computer system, the traffic being redirected to a selected traffic handling system, the computer system comprising:

Art Unit: 2143

a memory; and a processor coupled to the memory wherein at least one of the memory and the processor are adapted to provide:

-receiving traffic information from at least a portion of the associated traffic handling systems, wherein the traffic information specifies which data redirect, col 5, lines 38-45) should be redirected to the portion of associated traffic handling systems communicating the traffic information to at least a designated one of the associated traffic handling systems; and receiving traffic redirection information from the designated traffic handling system, the traffic redirection information being based on the communicated traffic information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

24. Claim 53 recites similar limitation as claim 15. They are analyzed and rejected by the same rational.

25. As per claim 58, a designated traffic handling system associated with a plurality of traffic handling systems and operable to facilitate redirection of traffic sent from a first computer system to a second computer system, the traffic being redirected by a third computer system to a selected traffic handling system, the designated traffic handling system comprising:

a memory; and a processor coupled to the memory, wherein at least one of the memory and the processor are adapted to provide: receiving traffic information from the third computer system, wherein the traffic information specifies which data should be redirected to which associated traffic handling systems; -allocating traffic portions to each traffic handling system based on the to received traffic information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

26. As per claim 72, a first processing system operable to reinsert a redirected packet into a flow between a second processing device and a third processing device, the computer system comprising: a memory; and a processor coupled to the memory, wherein at least one of the memory and the processor are adapted to provide:

receiving a redirected packet from a third processing device in a forth processing device, wherein the third processing device has redirected the redirected packet from the second processing to the forth processing device; and returning the packet back to the third processing device for transmission to the second processing device, wherein the returning is performed by the fourth processing device. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, and lines 38-45)

27. As per claim 78, a computer program product for facilitating redirection of traffic sent from a first processing device to a second processing device, the computer program product comprising:

at least one computer readable medium; computer program instructions stored within the at least one computer readable product configured to cause a processing device to provide: at a third processing device associated with a plurality of traffic handling systems, receiving traffic information from at least a portion of the associated traffic handling systems, wherein the traffic information specifies which data should be redirected to the portion of associated traffic handling systems; communicating the traffic information to at least a designated one of the associated traffic handling systems; and at the third processing device, receiving traffic redirection information from the designated traffic handling system, the traffic redirection information being based on the communicated traffic information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

28. Claims 79 recite similar limitation as claim 2. It is analyzed and rejected by the same rational.

29. As per claim 80, an apparatus for facilitating redirection of traffic sent from a first processing device to a second processing device, wherein the apparatus is associated with a plurality of traffic handling systems, the apparatus comprising: means for receiving traffic information from at least a portion of the associated traffic handling systems, wherein the traffic information specifies which data should be redirected to the portion of associated traffic handling systems; and means for determining how to redirect data received by the apparatus to a selected traffic handling system based on the received traffic information.

Art Unit: 2143

(HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

30. As per claim 81, an apparatus for facilitating redirection of traffic sent from a first processing device to a second processing device, the apparatus being a designated traffic handling system associated with a plurality of traffic handling systems and one or more routes, the apparatus comprising: means for receiving traffic information from at least one of the routers, wherein the traffic information specifies which data should be redirected to which associated traffic handling system; and means for allocating traffic portions to each traffic handling system based on the received traffic information. (HTTP redirect, the HTTP redirect will occur when an HTTP Request arrives at a VIP that is at maximum connections, col 5, lines 38-45)

31. As per claim 82, an apparatus for reinserting a redirected packet into a flow between a first processing device and a second processing device, the apparatus comprising: means for receiving a redirected packet from a third processing device, wherein the third processing device has redirected the redirected packet from the second processing to the apparatus; and means for returning the packet back to the third processing device for transmission to the second processing device. (HTTP redirect, col 5, lines 38-45)

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 6, 11, 15-18, 26, 30-32, 35, 37-39, 49, 54-56, 64, 68-71, 75-77 are rejected under 35 U.S.C. 103(a) as being unpatentable over Logan et al. (US patent No. 6,578,066), and further in view of Malkin (US Pat No. 6,247,054).

Art Unit: 2143

32. As per claim 6, wherein the packet to be sent to the packet's original destination by determining that the packet is encapsulated and de-encapsulating the packet prior to sending the packet to its original destination. Although, Logan do not teach that the packet is encapsulated and de-encapsulating the packet prior to sending the packet to its original destination. Malkin disclose a method and apparatus for redirecting packets using encapsulation where the NAS (Network Access Server) encapsulates the first packet into a second packet and redirects the second to a redirection server. The packet is encapsulated to preserve the address of the original destination of the service request.

Malkin also teach a destination port of the transport layer may indirectly indicate to the NAS (Network Access server) what the type of service the subscriber is attempting to access. The NAS can compare the service request by the subscriber with the services that are available to the subscriber, as indicated by the authentication.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to employ Malkin method of encapsulation for redirecting packets with Logan et al. to create a unique method of load balancing for cost minimization and also bandwidth cost.

33. As per claim 11, wherein each field indicates that a hashed value of the corresponding field of the received packet is to be used to generate the index to the table identifying the plurality of associated traffic handling systems. (corresponds to an authentication phase of the PPP, the subscriber will typically provide the NAS with a user name, col 3, lines 49-57, Malkin)

34. As per claim 15, a method discloses the invention substantially as claimed including in the third processing device, receiving a packet from the first processing device destined for the second processing device; and when one or more port identifiers of the received packet matches a corresponding set field of the service options of the selected traffic handling system, redirecting the packet to the selected traffic handling system. (col 5, lines 52-56, matching the best site to respond to content requests, Logan et al.)

35. As per claims 16, a method wherein the traffic information sent from a selected traffic handling system to the third processing device includes security options for specifying an authentication level for messages communicated between the third processing device and the selected traffic handling system. (corresponds to an authentication phase of the PPP, where the subscriber will typically provide the NAS with a user name. The NAS, in response, will forward the user name onto an authentication server. The authentication server, in response, will inform the NAS, which Internet services, are available to the respective subscriber. Col 3, lines 49-56, Malkin)

36. As per claim 17, a method wherein the security options are configurable to select no authentication for messages communicated between the third processing device and the selected traffic handling system. (the authentication server, will inform the NAS, which Internet services, are available to the respective subscriber Col 3, lines 49-56, Malkin)

37. As per claim 18, a method wherein the security options are configurable to require a predetermined password encoded within messages communicated between the third processing device and the selected traffic handling system. (the step is obvious, because the Network Access Server (NAS) requires encoded password for authentication).

38. Claims 30-32, 54-56, and 68-70 recite similar limitation as claim 16-19. They are analyzed and rejected by the same rational.

39. Claims 35 and 73 recite similar limitation as claim 6. They are analyzed and rejected by the same rational.

40. Claims 26, 49 and 64 recite similar limitation as claim 11. They are analyzed and rejected by the same rational.

41. As per claims 37 and 75, a method and a processing system, wherein at least one of the memory and the processor are further adapted to provide modifying the redirected packet prior to sending the packet back. (The step of claims 37 and 75 are obvious,

Art Unit: 2143

because when a packet is back means either the destination was not found or an error has occurred).

42. As per claims 38 and 76, a method and a processing system, wherein a destination addresses of the redirected packet is modified prior to sending the packet back. (The step of claims 38 and 76 are obvious, because when a packet is back means either the destination was not found or an error has occurred).

43. As per claims 39 and 77, a method and a processing system, wherein at least one of the memory and the processor are further adapted to provide making a copy of the redirected packet prior to sending the packet back. (Upon receipt, the redirection server generates a reply to the Internet service request, which specifies why the service request was denied. col 4, lines 44-51, Malkin)

44. As per claims 71, a method wherein the traffic information includes identifying information for the selected traffic handling system. (reply packet identifies first destination as a source of reply packet, col 5, lines 60-62, Malkin).

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the mailing date of this final action.

Art Unit: 2143


Any inquiry concerning this communication or earlier communications from the examiner should be directed to Mitra Kianersi whose telephone number is (571) 272-3915. The examiner can normally be reached on 7:00AM-4:00PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wiley can be reached on (571) 272-3923. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Mitra Kianersi

11/18/04


JACK B. HARVEY
SUPERVISORY PATENT EXAMINER